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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,588	01/05/2004	Darius Martin Sullivan	081-0002-1	3002
22120	7590	11/19/2004	EXAMINER	
ZAGORIN O'BRIEN & GRAHAM, L.L.P. 7600B N. CAPITAL OF TEXAS HWY. SUITE 350 AUSTIN, TX 78731			BUI, BRYAN	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/751,588

Applicant(s)

SULLIVAN, DARIUS MARTIN

Examiner

Bryan Bui

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-52 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-9, 12-14, 17-19, 22, 53-55 and 58-61 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 10, 11, 15, 16, 20, 21, 56, 57, 62 and 63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5, 7, 9, 11-2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-9, 12-14, 17-19, 22, 53-55, 58-61 are rejected under 35 U.S.C. 103(a) as being obvious over Hill (US 20010006006).

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by:

- (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the

reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

With respect to claims 1, 12, 53, Hill teaches figure 1, a contact sensitive device (10) comprising: a member capable of supporting bending waves (12); a sensor (16 along vertical or horizontal direction) mounted on the member for measuring bending wave vibration in the member to determine a first measured bending wave signal; at least a second sensor (16 along horizontal or vertical direction) to determine a second measured bending wave signal; and a processor configured to determine information related to a contact (page 4, paragraph 0059). Hill does not mention optimize a product of a set of corrected impulse response measurements from each sensor. However, Hill discloses the algorithm process to optimize the signal at each sensing transducer, calculating the frequency response at each transducer, adding information on the location of the contact impulse to provide corrected (non-dispersive) impulse response (page 6, from paragraphs 0090 to 00997). It would have been obvious to one of ordinary skill in the art to modify Hill's teaching to include a product of a set of corrected impulse response measurement from each sensor such the algorithm process steps as forementioned above to apply the corrected impulse response measurements in determining information related to a contact points more accurate (page 6, paragraphs 0090-0097).

With respect to claims 2, 13, 54, wherein the second measured bending wave

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signal is measured simultaneously with the first measured bending wave signal (figures 3, 4, item 26);

With respect to claims 3, 14, 55, wherein a corrected impulse response measurement is calculated by calculating a Fourier transform of the measured bending wave signal, calculating an equivalent response from a notional sensor positioned at a contact site and calculating an inverse Fourier transform of an equivalent response to provide a function to be optimized (figures 5, 9, 10, paragraph 0124);

With respect to claims 6-7, 17, 58-59, wherein the processor is configured to determine the contact position by using knowledge of the periodicity of a pattern on the surface of the member (paragraph 0124); wherein an interval between impulses represents the time in which a contact has travelled to an adjacent feature of the pattern (paragraph 0126).

With respect to claims 8, 18, 60, wherein the device includes a purely passive sensor responsive to measure bending wave signals generated by an initial impact or by frictional movement of the contact (paragraph 0018).

With respect to claim 9, 19, 61, wherein the device includes an active sensor comprising an emitting transducer (paragraph 0060).

### ***Allowable Subject Matter***

3. Claims 4-5, 10-11, 15-16, 20-21, 56-57, 62-63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 23-52 are indicating for allowed. The prior art does not disclose the **claimed combination** as recited: wherein a surface of the member comprises a raised pattern whereby a contact drawn across the surface provides a variable force to the member to generate bending waves in the member.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Bui whose telephone number is 571-272-2271. The examiner can normally be reached on M-Th from 7am-4pm, and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BB

11/17/2004

**BRYAN BUI**  
**PRIMARY EXAMINER**

